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oval or broadly oblong (about 4 lines long and fully two inches wide), plane, surmounted by a slender style of fully 2 lines in length; seeds only 3 to 6, orbicular, distinctly winged; embryo as in the preceding; petals pure golden yellow.—Cedar barrens, Lavergne, near Nashville, Tennessee, *Dr. Gattinger*, June 2, 1879.

Fresh specimens and notes are solicited by

ASA GRAY.

AUTOMATIC MOVEMENT OF THE FROND OF ASPLENium TRICHOMANES.—Mr. E. J. Loomis, of the Nautical Almanac office, Washington, recently showed me a phenomenon which I suppose has never before been noticed, and which is commended to the attention of botanists. A tuft of *Asplenium Trichomanes*, gathered last autumn in the mountains of Virginia, is growing in his house, in a glass dish. About two months ago he noticed that one of the fronds—a rather short and erect one which is now showing fructification—made quick movements alternately back and forth, in the plane of the frond, through from 20 to 40 degrees, whenever the vessel was brought from its shaded situation into sunlight or bright daylight. The movement was more extensive and rapid when the frond was younger. When I saw it on the 23d of January, its compass was within 15 degrees, and was about as rapid as that of leaflets of *Desmodium gyrans*. It was more rapid than the second hand of a watch, but with occasional stops in the course of each half vibration. This was in full daylight next a window, but not in sunshine. No movement had been observed in the other fronds, which were all sterile and reclining, with the exception of a single one which was just unfolding, in which Mr. Loomis thinks he has detected incipient motion of the same kind.

It is very easy to obtain this little Fern and to set it growing. We may expect further observations to be made upon it without delay.—

ASA GRAY.

HOW TO MAKE PERMANENT BOTANICAL OBJECTS FOR THE MICROSCOPE.—In the GAZETTE for September, 1879, I had a short paper on staining and double staining of vegetable tissues. I desire now to add a few hints on the previous and the subsequent stages of the preparation.

Mounted objects may be divided into two classes, i.e., the opaque, and the transparent;—the former to be seen by a light (more or less strong) from above, and the latter by light passing through the object from below.

The first thing for the preparer to decide upon, is, which of these two classes shall any object come under?

If the former, the preparation is extremely simple. The whole problem resolves itself into making a suitable case for the treasure. To give a tangible idea suppose we have the seed of a *Portulaca* or the scarlet tip of a *Cladonia*, or the yellow apothecium of a *Thelochistes*. The first thing to do, is to see that your cage (or to speak strictly, your cell) is opaque and of sufficient depth to hold the object. Opticians now keep wooden slides with a central concavity ready to close by placing over it a glass cover. These are cheap and neat.